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I N T E R - O F F I C E      C O R R E S P O N D E N C E

Richmond, Virginia

To: Cliff Lilly

Date: Nov. 17, 1988

From: Chris Campbell

Subject: SUMMARY OF FILTER RESEARCH AND DEVELOPMENT PRESENTATION AT SEPTEMBER 28, 1988 PLANNING CONFERENCE

The overall goal of the Filter Research and Development Project is: "To develop filter systems which will achieve performance advantages for our products".

Three major program strategies are being pursued:

1. Develop improved filtration systems.

Increased filtration efficiency systems are being investigated which result in better smoke removal at an equal pressure drop. These include Cellulose Acetate Web from Celanese, paper filters, Eastman low denier tow, and very low denier polypropylene tows. Use of an improved efficiency filter could result in a subjective advantage at the same delivery, or equivalent subjective response at lower delivery.

Improvement of menthol stability over time will result in products which deliver desired levels of menthol regardless of age after manufacture. Planned testing to accomplish this includes Filtrona heat set filters, PVA menthol formulation improvements, and pre-application of menthol to tow prior to rod formation.

Selective filtration of smoke components by use of specific additives in the filter are expected to change the subjective response or help meet particular delivery targets. Testing is underway with additives which will change the subjective character of FML filters. Also, additives which preferentially reduce nicotine delivery are being identified for possible use on GCC Marlboro where nicotine delivery is regulated.

2. Model the effects of filter designs on cigarette performance.

Mathematical models of Low Density and ART tobacco rods have been developed which predict pressure drop and delivery as functions of rod design, puff position and puff volume. These are available in a software package for design assistance.

Models to predict the performance of paper filters, CA web filters, low denier tows, concentric filters, tube-in-tow filters and lowered mass burn rate products are in the process of being developed. An expert system for accessing these programs is scheduled to be installed for use by the Filter R&D Group.

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3. Provide filter support for major R&D programs.

Filter samples will be provided for analytical and subjective evaluation on various major R&D programs such as ART, High Taste / Low Tar, Low Density Rod, and Project Tomorrow.

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